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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,097	02/21/2006	Leung Choi Chow	2733.35WOUS	4192

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EXAMINER

MICHENER, JOSHUA J

ART UNIT

PAPER NUMBER

3644

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12/09/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/552,097

**Applicant(s)**

CHOW ET AL.

**Examiner**

JOSHUA J. MICHENER

**Art Unit**

3644

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 8/21/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-29 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) 19, 21, 22, 24, 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-18, 20, 23, 27-29, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Fletcher et al. (US 3,187,797).**

1. Regarding claim 28, Fletcher et al. discloses an aircraft (col 1, lines 10 – 25) with retractable landing gear (col 2, lines 36 - 44) with tires and rims (figures 1, 2, and 5 – 7) wherein the tire and wheel are shaped that a gap is defined between a surface of the tire and wheel (figures 1, 2, 5 - 7), a separate part (figures 1, 2, 5 - 7) that smoothly envelopes at the junction between the tire and the rim which closes said gap (see figures above), said separate part is so shaped that on at least one side of the wheel, a surface of said separate interfaces smoothly with said surface of the wheel and surface of the tire. While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims. In re Schreiber, 128 F.3d 1473, 1477-78, 44USPQ2d, 1429, 1431-2 (Fed. Cir. 1997); Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); Ex parte Masham, 2USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 15 – 18, 20, 23, 27 – 29, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Large et al. (US 5,100,083) in view of Roth (US 1,743,074).**

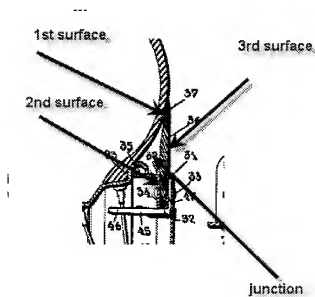
2. Regarding claims 15, 16, 17, 18, 23, 28, and 29, Large discloses an aircraft comprising movable landing gear between and stowed and retracted position (figures 4 and 5) wherein the landing gear comprises a wheel having a tire and a rim (figures 1 – 3) where a junction exists between the tire and rim forming a gap to some degree (figures 1 – 3).

Large fails to teach of a separate part that is provided between the junction to close the gap wherein a first surface is in contact with the tire, a second surface in contact with the wheel (rim) and a third surface that extends across the junction.

Roth discloses it is known to have a separate part on both sides of the wheel with a first surface in contact with the tire (see figure below), the second surface in contact with the rim (17,23,35,32,34) and third surface extending across the gap on an aircraft wheel (see figure below) wherein the separate part is flexible and made of rubber (col 2, line 21) thus deformable and capable to be moved manually.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Large to comprise of a separate part that closes the gap between the junction on both sides of the wheel between the tire and rim as disclosed by Roth in order to reduce air resistance by streamlining the flow as taught by Roth (lines 5 – 11).

It should be appreciated that the applicant's functional language in the claims does not serve to impart patentability. While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims.



Regarding claim 20, Large, as modified, discloses the apparatus as in claim 15 wherein at least a portion (the separate part is made of rubber) is so configured that once the force between the wheels and the ground exceeds a first given threshold force, it moves out of a gap that said separate part bridges when the aircraft is airborne, and once the force between the wheels and the ground drops to or below a second given threshold force, it moves back to the position in which it bridges the gap.

Regarding claim 27, Large, as modified, discloses the apparatus as in claim 15, wherein the landing gear are suitable for jet engine aircraft with undercarriage cargo bay storage, but is silent to type/size suitable for 50 or more passengers. However, the Examiner takes official notice, it is old and well known in the art that commercial airliners are comprised of retractable landing gear with undercarriage bay storage wherein some jet engine airliners carry 50 or more passengers. Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement this landing gear system of Large, as modified into an airliner that carries 50 or more passengers because it is old and well known to utilize retractable landing gear on commercial airlines to reduce air drag during takeoff and landing.

Regarding claim 33, Large, as modified, discloses the apparatus as in claim 15 wherein the first surface follows the shape of the tire (see figure above).

Regarding claim 34, as best understood, Large, as modified, discloses the apparatus as in claim 15 wherein the first surface follows the shape of the rim (see figure above).

### ***Response to Arguments***

Applicant's arguments filed 3/6/2009 have been fully considered but they are not persuasive.

In response to Applicant's arguments the Fletcher does not smoothly envelop the junction between the tire and rim, does not close the gap between the tire and the rim and is not streamlined, the Examiner respectfully disagrees. Any of the (figures 1, 2, 5 – 7) show a separate part “smoothly enveloping a gap at the junction between the tire and rim” where the Examiner contends the separate part will lead to streamlining of airflow when used.

In response to Applicant's arguments regarding that Roth has an intricate structure and thus the combination of Large with Roth fails to incorporate all the limitations of the independent claims, the Examiner respectfully disagrees. As set forth above, all the structural limitations have been met.

In response to Applicant's argument that one of ordinary skill in the art would not look to Roth to reduce noise of modern aircraft retractable landing gear because a) Roth is a fixed landing gear system, b) noise reduction has only recently become a significant design issue c) as Roth is clearly old and outdated, and d) Roth has entirely different structure and significant structural changes would be required on a modern deployable landing gear, The Examiner respectfully disagrees.

a) Roth is in the field of aeronautics, landing gear, and utilizes a separate piece between the rim and tire to stream line airflow which would at least reduce drag. One of ordinary skill in the art would clearly be interested in stream lining airflow between tire and rim. As drag is always a consideration in aerodynamics of aircraft design.

b) This argument is off point. The combination of Large v Roth is not for noise reduction but to "reduce air resistance by streamlining the flow" as set forth above. But, it should be noted, the Examiner contends that one of ordinary skill would clearly recognize that by reducing air resistance by stream lining flow the functional result would be some degree of noise reduction.

c) In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed

to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

d) The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to Applicant's argument that there is no motivation to combine references, as set forth above, "to reduce air resistance by streamlining the flow" as taught by Roth (lines 5 – 11).

It is further noted, in light of the recent Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, (550 U.S.-, 82 USPQ2d 1385 (2007), *KSR* forecloses the argument that a **specific** teaching, suggestion, or motivation is required to support a finding of obviousness. (see also the recent Board decision *Ex parte Smith*, - -USPQ2d- -, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (citing *KSR*, USPQ2d at 1396) (available at <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd071925.pdf>).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA J. MICHENER whose telephone number is (571)272-1467. The examiner can normally be reached on Monday through Friday 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on 571-272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/  
Supervisory Patent Examiner, Art Unit 3644

/J. J. M./  
Examiner, Art Unit 3644